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John M. Epley

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EXAMINER

HOEKSTRA, JEFFREY GERBEN

ART UNIT

PAPER NUMBER

3736

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/715,871	<b>Applicant(s)</b> EPLEY, JOHN M.	
	<b>Examiner</b> JEFFREY G. HOEKSTRA	<b>Art Unit</b> 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 20-25 is/are pending in the application.
- 4a) Of the above claim(s) 9-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 20-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Notice of Amendment***

1. In response to the amendments filed on 12/23/2008, amended claim(s) 1, 7, and 20 and new claim(s) 24 and 25 is/are acknowledged. The current rejections of the claim(s) 1-8 and 20-23 is/are *withdrawn*. The following new and/or reiterated grounds of rejection are set forth:

### ***Claim Objections***

2. Claims 2 and 8 are objected to because of the following informalities: the positive recitation of “wherein said devices are drawn from a list including...” appears to claim within the scope of invention a number of structures in the alternative comprising a Markush group. Applicant’s attention is directed to MPEP 2173.05(h). The Examiner notes Applicant may have intended to positively recite “wherein the devices are selected from the group consisting of...”. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 7, 8, 20, 21, 22, are rejected under 35 U.S.C. 102(b) as being anticipated by Galiana et al. (US 5,942,954, hereinafter Galiana).

5. For claim 1, Galiana discloses an apparatus for assisting in the computer-aided, substantially real-time diagnoses and treatments of vestibular disorders (column 3 line 60 – column 4 line 17), comprising *inter alia*:

- a head-wearable frame structure (50) (as best seen in Figure 4) (column 8 lines 19-32) adapted for wearing on a subject's head in a condition of positional stability relative thereto (as best seen in Figure 4) (column 8 lines 19-32), the frame structure including an integrated and likewise positionally stable eye-enclosing portion (a portion of heads up display 12) (as best seen in Figure 1) configured to control visual input by substantially obstructing the subject's normal visual range (as best seen in Figure 1) (column 4 lines 17-65), the eye-enclosing portion including fixedly anchored thereto each of a likewise positionally stable image capture device (video based eye tracker 14) (as best seen in Figure 1) (column 4 lines 17-65) positioned to capture an image of at least one of the subject's eyes and a light-emitting structure (the display of heads up display 12) (as best seen in Figure 1) (column 4 lines 17-65);
- at least a pair of vestibular-parameter data-parameter devices (10, 16, and/or 53) (as best seen in Figure 1) (column 4 lines 17-65 and column 8 lines 19-32) selectively anchored/anchorable to said frame structure in conditions thereon of relative positional stability both with respect to the frame structure and with respect to one another (as best seen in Figures 1 and 4) (column 4 lines 17-65 and column 8 lines 19-32), each said device being adapted to engage in at least one of the activities including (a) delivering to, and (b) receiving from, a subject's head

vestibular-relevant parameter data (column 4 lines 17-65 and column 8 lines 19-32);  
and

- a communication structure (18) (as best seen in Figure 1) (column 4 line 66 – column 7 line 58) operatively connected to said devices (as best seen in Figure 1) (column 4 line 66 – column 7 line 58), and operatively associable with appropriate computing structure (column 4 line 66 – column 7 line 58), adapted to accommodate both (a) communicating the vestibular-relevant parameter data to (column 4 line 66 – column 7 line 58), and (b) communicating the vestibular-relevant parameter data from (column 4 line 66 – column 7 line 58), said devices relative to such an associated computing structure (column 4 line 66 – column 7 line 58).

6. For claim 2, Galiana discloses the apparatus, wherein said devices are selected from the group consisting of: (a) an electronic video image-collecting device, (d) a sound deliverer, (g) a light-emitting structure, and (h) a visual image-presenting structure (column 4 lines 17-65 and column 8 lines 19-32).

7. For claim 7, Galiana discloses an apparatus for assisting in the computer-aided, substantially real-time diagnoses and treatments of vestibular disorders (column 3 line 60 – column 4 line 17), comprising *inter alia*:

- a frame structure (50) (as best seen in Figure 4) (column 8 lines 19-32) wearably securable to a subject's head in a manner causing the frame structure to function as a non-relative-motion unit with respect to the subject's head (as best seen in Figure 4) (column 8 lines 19-32), the frame structure comprising an integrated and likewise

Art Unit: 3736

non-relative motion, substantially vision-obstructing goggle-like portion (a portion of heads up display 12) (as best seen in Figure 1) (column 4 lines 17-65);

- a light emitting means fixedly anchored to the goggle-like portion (the display of heads up display 12) (as best seen in Figure 1) (column 4 lines 17-65);
- an integrated subject eye-movement monitoring camera (video based eye tracker 14) (as best seen in Figure 1) (column 4 lines 17-65) fixedly anchored to the goggle-like portion;
- plural, different, data-parameter devices (10, 16, and/or 53) (as best seen in Figure 1) (column 4 lines 17-65 and column 8 lines 19-32), each selectively anchored/anchorable to said frame structure in a manner causing it to function as a unit with the frame structure (as best seen in Figures 1 and 4) (column 4 lines 17-65 and column 8 lines 19-32), and further to function without any relative motion permitted between it and another so- anchored/anchorable device (as best seen in Figures 1 and 4) (column 4 lines 17-65 and column 8 lines 19-32), with each said device being adapted to engage in both (a) delivering to, and (b) receiving from, a subject's head, different- parameter vestibular data which are relevant to diagnosis and treatment of a vestibular disorder (column 4 lines 17-65 and column 8 lines 19-32)r; and
- a computing structure (18) (as best seen in Figure 1) (column 4 line 66 – column 7 line 58) operatively connected to all so-anchored ones of said devices (as best seen in Figure 1) (column 4 line 66 – column 7 line 58), adapted to share in the delivery and reception of such different-parameter data with those devices (column 4 line 66

– column 7 line 58), said computing structure including algorithm structure (column 4 lines 25-31) which equips the computing structure to perform substantially real-time operations relative to such delivered and received, different-parameter data, including performing the operation of vestibular-disorder correlation and analysis of received data (column 4 line 66 – column 7 line 58).

8. For claim 8, Galiana discloses the apparatus, wherein said devices are selected from the group consisting of: (a) an electronic video image-collecting device, (d) a sound deliverer, (g) a light-emitting structure, and (h) visual image-presenting structure (column 4 lines 17-65 and column 8 lines 19-32).

9. For claim 20, Galiana discloses a system employable by an attendant user for diagnosing and treating a subject's vestibular disorder, said system, in operative condition, (column 3 line 60 – column 4 line 17) comprising *inter alia*:

- a headgear (50) (as best seen in Figure 4) (column 8 lines 19-32) worn by a subject, comprising *inter alia*:
  - a frame structure (50) (as best seen in Figure 4) (column 8 lines 19-32) seated with positional stability on and relative to the subject's head (as best seen in Figure 4) (column 8 lines 19-32);
  - a likewise positionally stable eye-enclosing, visual-input isolating and controlling portion (a portion of heads up display 12) (as best seen in Figure 1) (column 4 lines 17-65) integral with the frame structure and configured to substantially limit the subject's visual input; and

Art Unit: 3736

- plural vestibular-disorder-relevant information sensors and stimuli deliverers (10, 14, 16, and/or 53) (as best seen in Figure 1) (column 4 lines 17-65 and column 8 lines 19-32) anchored with positional stability on said frame structure, wherein at least one of the anchored sensors is an image capture device(video based eye tracker 14) (as best seen in Figure 1) (column 4 lines 17-65) (video based eye tracker 14) (as best seen in Figure 1) (column 4 lines 17-65) configured thereon to capture an image of at least one of the subject's eyes;
- a computer (18) (as best seen in Figure 1) (column 4 line 66 – column 7 line 58) armed with vestibular-disorder, expert-trained algorithm structure (column 4 lines 25-31);  
and
- a data-flow and control interposition structure (the electrical connections between the devices as best seen in Figure 1), including feedback structure (column 4 line 66 – column 7 line 58), operatively interposed between said headgear, said computer, the subject, and the attending user, operable, in relation to the expert-trained capabilities of said algorithm structure (column 4 line 66 – column 7 line 58), (a) to collect data from, and to effect the delivery of stimuli to, the subject via said headgear (column 4 line 66 – column 7 line 58), and further (b) to effect and control the engagement of selected diagnosing and treating activities with respect to the subject (column 4 line 66 – column 7 line 58), including initiating such effecting and



controlling as a feedback response to such collected data (column 4 line 66 – column 7 line 58).

10. For claim 21, Galiana discloses the system, wherein the feedback response is one which furnishes diagnostic and/or treatment guidance to the attending user (column 4 line 66 – column 7 line 58).

11. For claim 22, Galiana discloses the system, wherein the feedback response functions to effect changes in stimuli delivered to the subject (column 4 line 66 – column 7 line 58).

12. For claim 23, Galiana discloses the system, wherein the feedback response functions to effect changes in fluid-flow delivery (i.e. sounds generated through headphones 53 which passes through the fluid air) as a stimulus to the subject (column 4 line 66 – column 7 line 58).

13. For claim 24, Galiana discloses the system, further including a computer-operable subject repositioning mechanism (51) operatively coupled with the computer via the data-flow and control interposition structure (column 8 lines 19-32).

14. For claim 25, Galiana discloses the system, wherein the expert-trained algorithm structure, when executed by the computer specially armed therewith, is capable of presenting to the attendant user either or both of visual and audible subject repositioning parameter data (column 3 lines 3-9) instructing the attendant user regarding manual repositioning of the subject for affecting either or both of diagnosis and treatment of the subject, wherein said presenting comprises either or both of causing the operative components of a sound generating device to produce an audibly-

cognizable representation of said instruction and causing the operative components of a display device to produce a visually-cognizable depiction of said instruction.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galiana in view of Densert et al (US 6,159,171, hereinafter Densert).

17. Galiana discloses the claimed invention, as set forth, cited above, and including directing jets of fluid water or air towards the head of a subject to perturb it (column 4 lines 37-47), except for expressly disclosing the following:

- (3, 4, 5) wherein said sound deliverer and said air-pressure modifier share a common structure which comprises an elongate tubular body structure having a delivery end removably insertable into the ear, and an oblong, compliant, tubular and tapered insertion bulb fluid-sealingly joined to said delivery end, and possessing an outside surface which is directly and fluid-sealingly engageable with ear tissue with said body structure's said delivery end inserted into the ear; and
- (6) wherein said fluid-flow structure comprises an elongate, malleable, tubular fluid-flow body structure having an end configured to pierce the subject's tympanic

membrane, and a digital manipulation, maneuvering-assist enlargement joined to said body at a location spaced from said end.

18. Densert teaches an apparatus for assisting in the diagnoses and treatments of vestibular disorders, comprising *inter alia*:

- (3, 4, 5) a sound delivering and air-pressure modifier device share a common structure (as best seen in Figure 2) comprising an elongate tubular body structure (24) having a delivery end removably insertable into the ear (as best seen in Figure 2), and an oblong, compliant, tubular and tapered insertion bulb (25) fluid-sealingly joined to said delivery end, and possessing an outside surface which is directly and fluid-sealingly engageable with ear tissue with said body structure's said delivery end inserted into the ear (as best seen in Figure 2); and
- (6) wherein said fluid-flow structure comprises an elongate, malleable, tubular fluid-flow body structure (as best seen in Figure 2) having an end capable of piercing the subject's tympanic membrane, and a digital manipulation, maneuvering-assist enlargement (as best seen in Figure 2) joined to said body at a location spaced from said end.

19. All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. All of the vestibular-disorder-relevant information sensors and stimuli component parts are known in Galiana and Densert. The only difference is the combination of vestibular-disorder-relevant

Art Unit: 3736

information sensors and stimuli component parts into a single device. Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the vestibular-disorder-relevant information sensors and stimuli components as taught by Galiana with the vestibular-disorder-relevant information sensors and stimuli components as taught by Densert to achieve the predictable results of providing an additional vestibular-disorder-relevant information sensors and stimuli component to a device aimed at assisting in the diagnoses and treatments of vestibular disorders.

### ***Response to Arguments***

20. Applicant's arguments with respect to claims 1-8 and 20-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 3736

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY G. HOEKSTRA whose telephone number is (571)272-7232. The examiner can normally be reached on Monday through Friday 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571)272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jeffrey G Hoekstra/  
Examiner, Art Unit 3736

/Max Hindenburg/  
Supervisory Patent Examiner, Art Unit 3736